

On Books

Mixed Bag: A Review of Frans de Waal's *The Ape and the Sushi Master: Cultural Reflections of a Primatologist*

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Frans de Waal challenges the belief that only humans manifest cultural transmission and asserts that because apes also do, human distinctiveness is seriously undermined. de Waal emphasizes the importance of social learning for ape culture. Issue is taken with de Waal's intentional stance regarding nonhumans and his negative, erroneous characterizations of aspects of behaviorism.

Key words: anthropomorphism, imitation, apes, culture, behaviorism

Because Frans de Waal is one of the world's leading primatologists, I looked forward to reading *The Ape and the Sushi Master: Cultural Reflections of a Primatologist* (2001). de Waal provides the reader with a good deal of interesting information, but I finished this work with a deep sense of disappointment.

The Interesting and Informative

This book is a mix of autobiographical anecdote, research report, and speculation. de Waal's central argument challenges the belief that only humans show cultural transmission, and emphasizes that if apes also show cultural transmission, the assumption of human distinctiveness is seriously undermined. de Waal's thesis that apes do in fact show cultural transmission is based on research in which apes prove to be capable of observational learning, that is, learning new behaviors from each other. Behavior analysts will

agree with much of what de Waal has to say, but they will also be chagrined by his unfounded attacks on behaviorism scattered throughout the book. Although this book has an extensive bibliography and chapter footnotes, it was written for a general audience. I outline below what is interesting and informative in this book, as well as the basis for my disappointment.

One of de Waal's purposes is to challenge the notion of human distinctiveness and the related idea that humans are somehow separate from nature. In his words, "our culture and dominant religion have tied human dignity and self-worth to our separation from nature and distinctness from other animals" (p. 3). Humans, he maintains, define themselves as the only species with culture and believe that culture has allowed them to break away from nature. Humans are wont to say that culture is what makes them human. To counter this view, de Waal reports the growing evidence of animal culture.

Relatedly, de Waal argues that we must discard the notion that human culture is the opposite of human nature. This is an outdated Western dualism that reflects humans distancing themselves from other animals because of their superior learning capacity; de

de Waal, F. (2001). *The ape and the sushi master: Cultural reflections of a primatologist*. New York: Basic Books.

This review is dedicated to the memory of Marian Breland Bailey.

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Waal's goal is to undermine such dualism. Humans and some other species have culture. But what is culture? de Waal's definition is that

Culture is a way of life shared by the members of one group but not necessarily with the members of other groups of the same species. It covers knowledge, habits, and skills, including underlying tendencies and preference, derived from exposure to and learning from others. Whenever systematic variation in knowledge, habits and skills between groups cannot be attributed to genetic or ecological factors, it is probably cultural. The way individuals learn from each other is secondary, but that they learn from each other is a requirement. Thus, the "culture" label does not apply to knowledge, habits, or skills that individuals readily acquire on their own. (p. 31)

de Waal aims to counterbalance what he sees as the current emphasis on nature (genetics) by much of society with a consideration of the importance of nurture (environment). (Of course, Skinner also emphasized the latter; this important point will be addressed below.) Thus the book's title refers to an analogy de Waal draws between the way behavior is transmitted in ape societies and the way sushi-making skills are passed down from master to apprentice through careful observation by the apprentice. The importance of observational learning (or social learning, or imitation) is stressed throughout the book. Natural selection has produced our capacity for culture, including our propensity for observational learning. "Culture is part of human nature" (p. 8).

Although I disagree with some of his assertions and positions, and I take exception to some gratuitous behaviorism bashing, much of what de Waal writes is valuable, interesting, and congenial to behavior analysis. For example, in view of the central role played by observational learning in behavior-analytic treatments (e.g., Baer & Sherman, 1964; Baum, 1994; Millenson & Leslie, 1979; Skinner, 1953, 1969), it was interesting to learn of de Waal's emphasis on its importance. de Waal asserts that observational learning is widespread in animals and describes its

role in the predator avoidance of monkeys (Mineka, Davidson, Cook, & Keir, 1984), food preference in crows, and food aversion in rats (Galef, 1982). He also describes generalized imitation by apes (Custance, Whiten, & Bard, 1995). Monkeys in Japan washing sweet potatoes (Kawai, 1965) is a famous phenomenon, and de Waal describes its discovery as well as its horizontal and intergenerational social transmission.

de Waal maintains that observational learning is complex, but his only requirement seems to be that the individual exhibiting it "would not have acquired [the behavior] by itself" (p. 209). Also, according to him, observational learning does not depend on reinforcement. At some level, behavior analysts might agree with this view. As the literature on generalized imitation shows, not every specific instance of imitative behavior requires reinforcement (e.g., Baer & Sherman, 1964; Custance et al., 1995). However, de Waal goes on to get himself into trouble. He writes that "imitation concerns novel acts or solutions that the animal is on the brink of discovering on its own" (p. 224). But how should we judge when an animal is on the brink of discovering something on its own? de Waal then proceeds with the contradictory assertion that "The central idea [about imitation] remains that one individual adopts another's behavior, which it most likely would never have done without exposure to the other" (p. 225). From de Waal's viewpoint, the important point underscored by findings about imitation among nonhumans is that nonhumans engage in a social, cultural process. de Waal describes many other interesting observations and experiments from around the world in support of his thesis of animal culture, such as chimpanzee hand clasping during mutual grooming (de Waal, 2001; McGrew & Tutin, 1978), chimpanzee cultural variants (e.g., in tool use; Whiten et al., 1999; Wrangham, McGrew, de Waal, & Heltne, 1994), the social maintenance of

macaque dominance hierarchies (de Waal, 2001), as well as what he calls chimpanzee "reconciliation" (Aureli & de Waal, 2000; de Waal, 2000). That at least some nonhumans show cultural transmission is one of the themes of his book. Humans, however, learn from others "more readily and precisely than any other animal" (p. 20).

As noted above, this book is a mixture that includes autobiographical material as well as de Waal's thoughts about research. de Waal's account of his early interest in animals is enjoyable reading. He also provides sketches of such prominent ethologists as Konrad Lorenz, Niko Tinbergen, and Kinji Imanishi, and describes the work of such lesser known figures as Satsue Mito and Schjelderup-Ebbe. Recognition is properly accorded the pioneering work of Japanese primatologists. Also positive is de Waal's stance regarding theory testing. "Given that the unexpected is inherently more exciting than the expected, the high status of theory testing remains a bit of a puzzle" (p. 185). This could have been written by Skinner (1956, 1984a).

de Waal emphasizes the complexity of animal behavior and warns that, given the "multilayered reality" of behavior, "we should be particularly wary of catchy metaphors" (pp. 295–296). Indeed. As he points out, metaphors are common in physics and chemistry (e.g., elements being "attracted" to each other) and can be quite useful. But metaphors can be pernicious when they are taken literally and obscure reality. Anthropomorphic metaphors of "selfish" genes and organisms "adapting" to their environment can be seriously misleading, de Waal argues. Given this warning, what then are we to make of de Waal's metaphors of chimpanzee "reconciliation" and "consolation"? de Waal reports that in the 1970s he discovered chimpanzees kissing and embracing after fighting, and he termed this *reconciliation* (Aureli & de Waal, 2000; de Waal, 2000). *Consolation* refers to "animals caring for one another and responding to others'

distress. For example, chimpanzees will approach a victim of attack, put an arm around her and gently pat her back, or groom her" (de Waal, 2001, pp. 325–326; de Waal & Aureli, 1996). I find it misleading to conclude, as de Waal does, that the behaviors he calls consolation warrant his view that "apes may be able to perceive the world from someone else's perspective, and thence understand what is wrong with the other, or what the other needs" (de Waal, 2001, p. 326).

The value of experimentation is emphasized throughout by de Waal. The question of how behavior is transmitted "remains a central puzzle in cultural primatology, one that can be solved only experimentally" (p. 255). It is premature to conclude, he argues, that animal culture rests on simple processes. He points out that there is "a dauntingly complex interplay between genetic and cultural transmission" (p. 266), and contrary to what de Waal seems to believe about behavior analysts, I believe that there would be little disagreement with this view (e.g., Baum, 1994; Glenn, 1991; Skinner, 1971).

The Troublesome

I take issue with a number of de Waal's positions. One contentious and ubiquitous feature of his approach is his advocacy of an anthropomorphism that involves taking an intentional stance regarding nonhumans. de Waal cautions against what he calls "anthropocentric" anthropomorphism, "the naive, humanizing . . . type" (p. 77) that takes our, rather than the animal's, perspective. In its place, de Waal advocates "animalcentric" anthropomorphism, that "takes the animal's perspective" (p. 77). de Waal points out that animalcentric anthropomorphism is not easy to apply to every species; some are more like us than others. However, because apes' sensory systems are essentially the same as ours, "anthropomorphism is not only tempting in the case of apes, but also hard

to reject on the grounds that we cannot know how they perceive the world" (de Waal, 2001, p. 77). To describe animalcentric anthropomorphism, de Waal uses the analogy of people who buy us presents that they think *we* like versus people who buy us presents that *they* like. In the first case, people manifest the kind of empathy held for animals by those who support animalcentric anthropomorphism. People in the second case are like those who support anthropocentric anthropomorphism.

Animalcentric anthropomorphism is a heuristic tool, says de Waal: It generates testable ideas. The goal is not to find in an animal something that is precisely equivalent to some aspect of our own inner lives. Animalcentric anthropomorphism "is very similar to the role of intuition in all of science. It inspires us to make predictions, and to ask ourselves how they can be tested, how we can demonstrate what we think is going on" (de Waal, 2001, p. 78). If animalcentric anthropomorphism suggests that apes have a capacity for empathy, for example, the behavior of the gorilla Binti is no surprise. Binti scooped up and carried to safety a 3-year-old boy who had fallen into the primate exhibit at Chicago's Brookfield Zoo. In de Waal's view, Binti's behavior is most parsimoniously explained in the same way that we would explain a human rescuer's. However, whether the rescuer is human or chimpanzee, behavior analysts would likely disagree with de Waal's emphasis on the construct of empathy, which explains nothing. We would ask instead, what are the sources of the "empathetic" behavior? Are they purely phylogenetic, purely ontogenic, or a combination of both? Furthermore, de Waal's example is not prediction, but postdiction.

Animalcentric anthropomorphism also attributes intentions to nonhumans. de Waal grants that intentionality "is a tricky concept. . . . Its presence is about as hard to prove as its absence; hence, caution in relation to animals would be entirely acceptable if

human behavior were held to the same standard" (p. 65). Of course, from a behavior-analytic stance, human and animal behavior can be held to the same standard (e.g., Leigland, 1998; Skinner, 1953). Intentionality is not only unnecessary, it can be misleading and convince us that pseudoexplanations are real explanations (Lamal, 2000; Leigland, 1998). Mental and anthropomorphic terms, such as de Waal's chimpanzee reconciliation, are best used as descriptive rather than explanatory terms (e.g., Lattal, 2001; Thompson, 2000; Thompson & Derr, 1996). But because de Waal assumes similar underlying mental processes for apes and humans, and when his goal is "understanding animals from the inside out" (p. 75), his assertion that animalcentric anthropomorphism is heuristic, not explanatory, can be seen as a proleptic move. At the least, his position is unclear. And the general audience at which this book is aimed could be excused for taking his metaphors and mentalisms (e.g., primate "conformism," reconciliation) as explanations of ape behavior.

As noted, de Waal emphasizes the importance of social (observational) learning as responsible for ape culture. He argues that "primate social learning stems from conformism—an urge to belong and fit in. . . . Bonding- and Identification-based Observational Learning [BIOL] . . . is a form of learning born out of the desire to be like others" (pp. 230–231), and that the social transmission responsible for primate culture is not dependent on "reward and punishment" (p. 216). But one can ask what is gained by incorporating the constructs of conformism and identification. Although the mechanism for learning from others may be "secondary" in de Waal's definition of culture (p. 31 and above), his emphasis on BIOL indicates that it is not secondary in his theoretical interests.

At various points throughout the book, de Waal contrasts his view of primates' abilities with what he perceives to be the wrong-headed view

held by behaviorists. Behavior analysts will recognize the fundamental charge: We ignore characteristics of other species that free them in varying degrees from complete control by their environments. The discussion of behaviorism is tinged with sarcasm. de Waal refers, for example, to "the so-called behaviorist school" (p. 50). "Behaviorism still exists, but the old type has been relegated to history as 'radical'" (p. 83). "Opposition to mentalistic interpretations of animal behavior is more and more a rear-guard movement" (p. 83).

Citing Skinner (1956), de Waal asserts that behaviorists believe that because the laws of learning are universal, animals are interchangeable. He quotes Skinner (from a secondary source): "Pigeon, rat, monkey, which is which? It doesn't matter" (de Waal, 2001, p. 57). Reminiscent of the many attacks on John B. Watson's (1926) statement about his ability to shape the lives of a dozen healthy infants, de Waal omits Skinner's next sentence, "Of course, these three species have behavioral repertoires which are as different as their anatomies" (Skinner, 1956, p. 230). de Waal might also have profited from reading Skinner's (1966/1984b) "The Phylogeny and Ontogeny of Behavior," in which he says that "No reputable student of animal behavior has ever taken the position" (p. 669) "that the animal comes to the laboratory as a virtual *tabula rasa*, that species differences are insignificant, and that all responses are about equally conditionable to all stimuli" (Breland & Breland, 1961, p. 684). Skinner also describes a number of parallels and similarities between phylogeny and ontogeny. Indeed, the importance of phylogeny is acknowledged throughout behavior analysis. For example, Bijou and Baer (1961) years ago wrote,

The number and kinds of responses a child is capable of displaying at any point of his life are determined by his status in the animal kingdom (species characteristics), his biological maturational stage, and his history of interaction with his particular environment. (p. 15)

In his discussion of the child's moral development, Bijou (1976) acknowledged the "function of his genetic history" (p. 110). de Waal, however, maintains (no source cited) that Skinner believed that children learn morality "through fear of punishment and a desire for praise" (p. 356). de Waal ignores the extent to which moral development depends on verbal behavior, made possible by humans' genetic endowment.

de Waal also argues that "Behaviorists really do believe that they can generalize from rats and pigeons to all other species" (p. 61). Interestingly, this point comes shortly after his assertion that "Behaviorism started losing its grip, and was forced to adopt the premises of evolutionary biology, with the discovery that learning is not the same for all situations and species" (p. 57). The reader can be excused for being baffled.

At some points, matters turn ugly. de Waal writes that Watson's and Skinner's views make "for a perfectly Orwellian worldview . . . and Skinner raised his own daughter . . . in his infamous Air-Crib" (p. 90). He refers to a "scary, totalitarian ideology" (p. 90) (presumably Watson's and Skinner's). Going even further, de Waal constructs an outrageous association between ideas of the Nazi ethologist, Konrad Lorenz, and Skinner:

Between 1940 and 1943, Lorenz repeatedly called for a deliberate, scientific race policy in order to improve Volk and race through the elimination of defective and inferior elements. What Skinner would later propose to achieve through brainwashing, Lorenz felt required harsh selection procedures. (p. 99)

de Waal goes on with an attempt to at least partially exculpate Lorenz. During World War II, Lorenz was involved in research on the supposed deleterious effects of "interbreeding" (de Waal, 2001, p. 100) between Germans and Poles. de Waal admits that it was a "gruesome enterprise" (p. 100) but asserts that "Lorenz was only marginally involved . . . it must be noted that he had nothing to do with the planning of

these projects, spent most of his time at another post . . . and was mentioned in publications only as an honorary (as opposed to central) member of the research team" (de Waal, 2001, pp. 100–101). Furthermore, de Waal tells us, Lorenz's views "were typical of racist attitudes of psychologists, anthropologists, and biologists at the beginning of the twentieth century" (de Waal, 2001, p. 101; and presumably still widespread in the 1940s). In de Waal's view, Lorenz's ethological work (e.g., his emphasis on species-specific behavior in birds) also overthrew "the absolute reign of behaviorism" (2001, p. 108).

Conclusion

The Ape and the Sushi Master includes a good deal of interesting material about a scientist's development, research findings, and speculations about humans and other primates. There is cause for concern however, not least because this book is intended for a general readership and was heavily promoted by the publisher. Readers not familiar with contemporary behaviorism will come away with an erroneous view of the discipline, particularly regarding de Waal's position that behavior analysts fail to acknowledge the importance of phylogeny. There is also something of a paradox at the heart of this book. de Waal castigates behaviorists for ignoring phylogeny, but at the same time he emphasizes the importance of learned behavior and cultural transmission among animals, particularly apes. One of his fundamental goals is to have us accept that humans and some apes, particularly chimpanzees, are more similar than he believes many of us are willing to concede. Unfortunately, his vehicle for accomplishing this goal is extension of the intentional stance from humans to primates. In this important respect, the book's focus is not a congenial one for behavior analysis.

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